

Identifying Entrustable Professional Activities for Shared Decision Making in Postgraduate Medical Education: A National Delphi Study

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Identifying Entrustable Professional Activities for Shared Decision Making in Postgraduate Medical Education: A National Delphi Study

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Abstract

Purpose

Although shared decision making (SDM) is considered the preferred approach in medical decision making, it is currently not routinely used in clinical practice. To bridge the transfer gap between SDM training and application, the authors aimed to reach consensus on entrustable professional activities (EPAs) for SDM and associated behavioral indicators as a framework to support self-directed learning during postgraduate medical education.

Method

Using existing literature on SDM frameworks and competencies; input from an interview study with 17

Dutch experts in SDM, doctor–patient communication, and medical education; and a national SDM expert meeting as a starting point, in 2017, the authors conducted a modified online Delphi study with a multidisciplinary Dutch panel of 32 experts in SDM and medical education.

Results

After 3 Delphi rounds, consensus was reached on 4 EPAs—(1) the resident discusses the desirability of SDM with the patient, (2) the resident discusses the options for management with the patient, (3) the resident explores the patient's preferences and deliberations, and (4) the resident takes a well-argued

decision together with the patient. Consensus was also reached on 18 associated behavioral indicators. Of the 32 experts, 30 (94%) agreed on this list of SDM EPAs and behavioral indicators.

Conclusions

The authors succeeded in developing EPAs and associated behavioral indicators for SDM for postgraduate medical education to improve the quality of SDM training and the application of SDM in clinical practice. These EPAs are characterized as process EPAs for SDM in contrast with content EPAs related to diverse medical complaints. A next step is the implementation of the SDM EPAs in existing competency-based workplace curricula.

Shared decision making (SDM) is the current preferred approach to involve patients in medical decision making and is considered the pinnacle of good patient care.^{1–6} In this interactive process, clinicians and patients work together to make deliberate decisions based on the patient's informed preferences and clinical evidence.⁷

Although the importance of SDM is recognized by both clinicians and patients,^{8,9} SDM is not routinely applied in clinical practice.^{10,11} This performance gap has resulted in more emphasis on training in SDM worldwide^{12,13} and including SDM in important medical competency frameworks.^{14,15} The low consistency in application of SDM in routine clinical practice may reflect the complexity of transfer between learning and practicing SDM skills.^{12,13,16}

We expect that supporting this transfer will enhance sustainable implementation of SDM in professional practice. This transfer is assumed to be most effective when complex skills are learned within the authentic clinical environment, triggered by powerful experiences and driven by reflection on clinical performance.^{17–19} Although we expect that integrating SDM in self-directed workplace learning will be effective, the lack of consensus on the needed competencies for SDM in clinical practice may negatively affect desired training outcomes.^{20,21}

Postgraduate medical education is believed to be the ideal learning

environment for self-directed workplace learning of complex competencies.²² The transfer of complex competencies to clinical practice is optimized in many postgraduate medical training programs by formulating entrustable professional activities (EPAs).^{23–26} While competencies are generic in nature—combining attitude, knowledge, and behavior—EPAs are formulated in the language of the profession that translates these competencies into clinical practice. EPAs are used to support focused observation and feedback and can therefore be used to foster the integration of complex SDM behavior into the learner's repertoire.^{18,19} The aim of this study was to reach consensus on EPAs for SDM and associated behavioral indicators that need to be taught during postgraduate medical education.

Method

Context

We aimed to develop EPAs for SDM that can be used in all medical specialties. In the Netherlands, medical specialty departments coordinate the curricula of

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Dutch postgraduate medical education, based on national requirements set by the Royal Dutch Medical Association. The duration of the training programs varies between 2 and 7 years, depending on the specialty, and the programs balance workplace-based training and formal education. Since 2015, postgraduate medical specialty training programs in the Netherlands have been required to train residents according to the CanMEDS competency framework. For most medical specialties, these competencies are translated into specific EPAs used to determine the development of the resident and the level of supervision needed.^{24,27} In some postgraduate curricula, SDM is mentioned as an important theme or as one of the communication competencies although the specific tasks and behaviors that are needed in clinical practice are not spelled out.

Design

We conducted a modified online Delphi study among Dutch experts between April and August 2017 to reach consensus on SDM EPAs and underlying behavioral indicators for postgraduate medical education. The Delphi technique is a widely used consensus method for medical education research.^{28–31} This technique uses multiple iterations of questionnaires or “rounds” to reach agreement on a specific topic; for each successive round, the researcher feeds back the results of the previous round. At least 2 successive rounds must be carried out to reach consensus.^{32–34} We developed the list of EPAs and behavioral indicators used in the first Delphi round by using existing literature and an interview study. First, A.B. reviewed key publications describing SDM frameworks, competencies, and behaviors,^{13,21,35–37} complemented by the snowball method and relevant citations from the Web of Science. Second, we conducted an interview study (which will be reported elsewhere) with Dutch experts in SDM, doctor–patient communication, and medical education. A.B. conducted 17 semistructured face-to-face interviews. All interviews were audiotaped, transcribed, and thematically analyzed during an iterative process of data collection and analysis. Combining the findings of the literature review and interviews, we then formulated the EPAs and behavioral indicators according to ten Cate’s guidelines.²⁴ We discussed this list with our national advisory

board, consisting of SDM experts, and edited this list until our research team, representing a variety of backgrounds (medical doctors, researchers in SDM, and educationalists), reached consensus regarding the content and formatting of our questionnaire.

Participants

We compiled a list of potential expert panel members using purposive sampling,³⁸ based on expertise and special interest in SDM, doctor–patient communication, and medical education. Because family medicine vocational training has a long tradition of including training in medical communication, experts working in this field were preferred. The full list included (1) clinicians active in routine patient care; (2) patient representatives with a special interest in SDM; (3) trainers, coordinators, and educational developers in medical communication, SDM, or evidence-based medicine (EBM); and (4) researchers in SDM, medical communication, and/or patient participation. We invited 57 potential expert panel members via an email with information about the purpose of the study, procedure, and time investment. We then invited those who agreed to participate to the first Delphi round after obtaining informed consent (Ethical Review Board of The Netherlands Association for Medical Education, file number 894). During the study, all expert panel members who finished a previous round were invited to participate in the next Delphi round. A research assistant pseudonymized all survey data before analysis to maintain the experts’ anonymity.

Data collection

We performed a 3-round modified online Delphi study using the web-based service tool Qualtrics (Qualtrics, Provo, Utah). Figure 1 summarizes the focus of each round and their outcomes. The first, second, and third Delphi rounds lasted 2, 3, and 6 weeks, respectively (Round 1, April 19 to May 2; Round 2, May 29 to June 19; Round 3, July 13 to August 25). After piloting the first-round questionnaire with 7 experts who did not participate in the study, we modified the text and layout of the questionnaire.

We aimed to achieve consensus on EPAs that residents are able to carry out after completing their postgraduate education.

We presented these 2 statements for each EPA and behavioral indicator: “I do like to include this EPA/behavioral indicator in the educational curriculum” and “this EPA/behavioral indicator is applicable in clinical practice.” Experts were asked to rate the EPAs and behavioral indicators on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). In the first exploratory round, respondents rated a list of EPAs and behavioral indicators on these 2 statements. In each round, we provided open text boxes for comments and feedback (e.g., clarification of scores and suggestions for textual changes and additional EPAs and behavioral indicators). We assessed the demographic characteristics of the participants during the first round.

We started the second round by providing an overview of the absolute personal scores and mean group scores resulting from the first round, for each questionnaire item, and a new version of the questionnaire, reflecting revisions we had made to the EPAs and behavioral indicators after our analysis of the first round. Again, we asked experts to rate each EPA and behavioral indicator on the 2 statements used in the first round. In this round, we aimed (1) to reach consensus on which EPAs and behavioral indicators needed to be included in a near-final list and (2) to revise again those EPAs and behavioral indicators for which there was still not consensus.

The third round had 2 parts. First, we presented the behavioral indicators on which our experts had not reached consensus in the second round and which we had reformulated after the analysis of the second round. We asked the experts to rerate the reformulated behavioral indicators, informing them that the new versions would be added to the final list of EPAs and behavioral indicators if they reached consensus during this round. Second, we presented a list of EPAs and behavioral indicators on which they had reached consensus in the second round. We asked the experts this question: “Do you agree with this near-final list of SDM EPAs and behavioral indicators for postgraduate medical education?” Response options were “yes” and “no.”

Data analyses

We analyzed the quantitative components of the questionnaires using descriptive statistics in SPSS 24 for Windows (IBM Corp., Armonk, New York). Since there

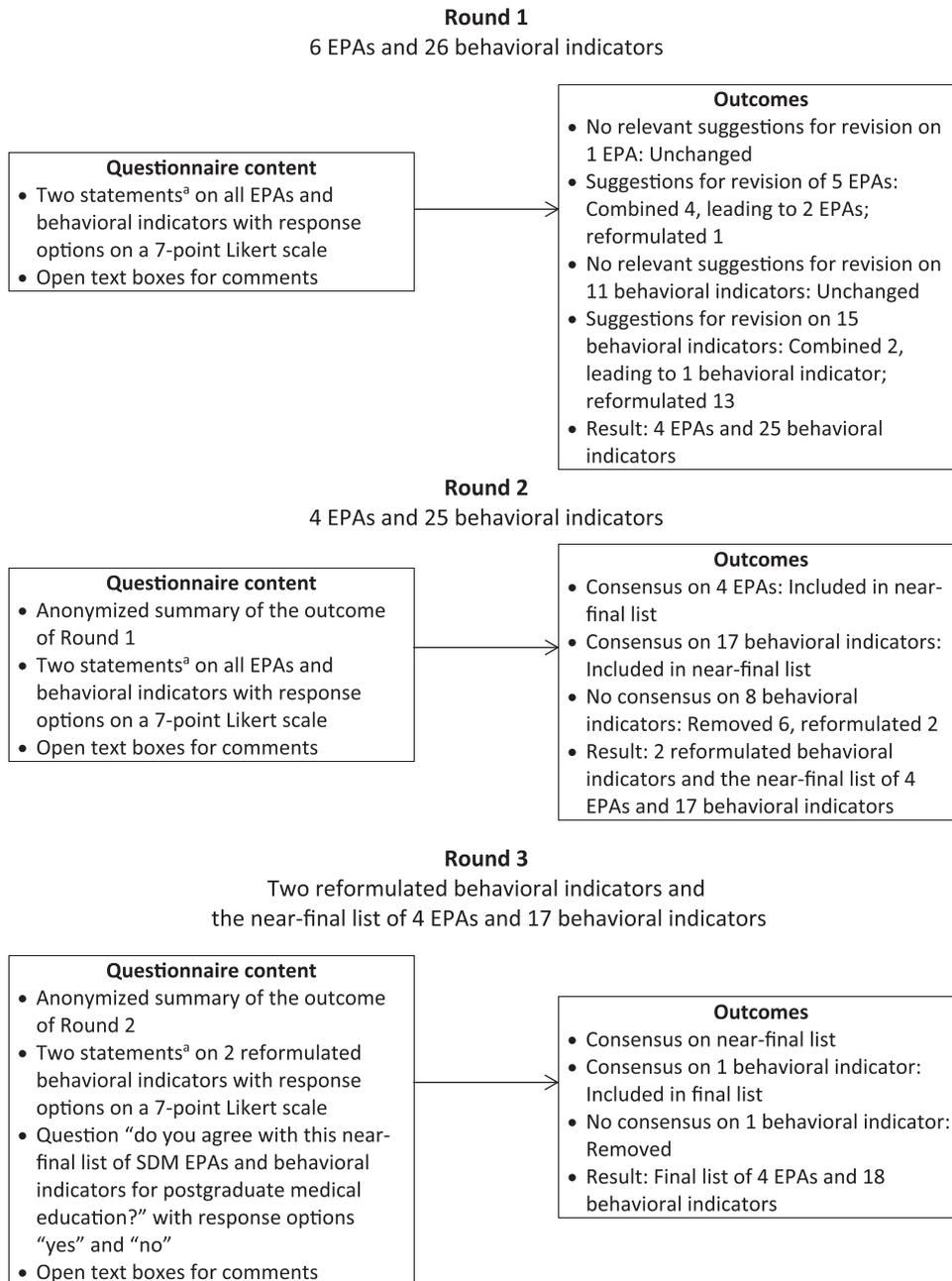


Figure 1 Overview of questionnaire content and outcomes, by Delphi round, for a study of entrustable professional activities and their associated behavioral indicators for shared decision making for postgraduate medical education, 2017. Abbreviations: EPA, entrustable professional activity; SDM, shared decision making.

^a“I do like to include this EPA/behavioral indicator in the educational curriculum” and “this EPA/behavioral indicator is applicable in clinical practice.”

are no standard definitions for consensus in a Delphi study,² the research team agreed to define consensus on individual EPAs and behavioral indicators in the first 2 rounds as a median score of ≥ 6 and $\geq 75\%$ of the expert panel assigning a score of ≥ 6 to the statement, “I do like to include this EPA/behavioral indicator in the educational curriculum.” We focused on this statement since we aimed to develop a complete overview of SDM EPAs and behavioral indicators that need to be included in the education

curriculum. We defined consensus on the near-final list of EPAs and behavioral indicators as $\geq 80\%$ agreement of the expert panel in Round 3.²⁸

A.B. grouped all the qualitative feedback provided in the open text boxes to identify recurring themes, which the research team used after each round in discussing whether the EPAs and behavioral indicators should be reformulated and if so, how. A professional translator translated the final EPAs and behavioral

indicators into English, and then a native Dutch speaker proficient in English and terms specific to SDM and medical education translated them back into Dutch to verify the accuracy of the translations. The research team approved the final English translation.

Results

Delphi procedure

Of the 57 invited potential expert panel members, 35 consented to participate

(a response rate of 61%). The first round was completed by 32 expert panel members (a response rate of 91%). Two experts did not complete the questionnaire due to a lack of time, and 1 expert decided not to participate due to a lack of knowledge of medical education. All 32 experts who completed the first round also completed the second and third rounds. The experts' ages ranged from 31 to 61 years (a mean of 47 years), and 21 were women (66%). All professional backgrounds that we considered relevant were represented in our expert panel (see Table 1 for participant characteristics).

Delphi results

Round 1. In the first round, we presented 6 EPAs and 26 behavioral indicators to the expert panel (for a summary of the rounds, see Figure 1 and Supplemental Digital Appendix 1 at <http://links.lww.com/ACADMED/A997>). We revised 5 EPAs using the experts' feedback. Due to overlap between 2 EPAs ("The resident

tailors the communication to the patient's personal context" and "the resident informs the patient about the desirability of shared decision making") and their associated behavioral indicators, we combined those 2 EPAs into "the resident discusses the desirability of shared decision making with the patient" and rearranged their associated behavioral indicators under this new EPA. Experts also mentioned overlap between 2 other EPAs: "The resident explores the patient's preferences" and "the resident assists the patient in deliberating the options" and their associated behavioral indicators. Therefore, we rearranged all behavioral indicators under this newly formulated EPA: "The resident explores the patient's preferences and deliberations." Because the experts evaluated the EPA "the resident informs the patient about the options for management" as too directive, we reformulated this EPA as "the resident discusses the options for management with the patient." We did not change the EPA "the resident takes a well-argued decision together with the patient" because the experts evaluated it positively and made no suggestions for revision.

Of the 26 behavioral indicators presented, we revised 15 before Round 2, using the experts' qualitative feedback (see Supplemental Digital Appendix 1 at <http://links.lww.com/ACADMED/A997>). We combined the 2 behavioral indicators "the resident clarifies how the patient's preferences relate to their perspective and personal goals and values" and "the resident counsels the patient in deliberating the options, taking perspectives and personal goals and values into account" into a new behavioral indicator: "The resident discusses whether the patient's preferences fit in sufficiently with their perspective and personal goals and values." Furthermore, we made minor textual changes to 13 of the 15 revised behavioral indicators. We left the remaining 11 behavioral indicators unchanged because they were evaluated positively and/or the experts offered no suggestions for revision.

Round 2. We presented the 4 EPAs and 25 behavioral indicators resulting from Round 1 in the second round (see Figure 1 and Supplemental Digital Appendix 1 at <http://links.lww.com/ACADMED/A997>). Because consensus was reached and the experts provided no relevant qualitative feedback on the 4 EPAs during Round 2,

we included the unchanged EPAs in the near-final list. Consensus was reached on 17 behavioral indicators. Because the experts did not provide any relevant suggestions for change, we included these indicators unchanged in the near-final list. Of the 8 behavioral indicators on which no consensus was reached, we reformulated 2 using the experts' qualitative feedback. The behavioral indicator "the resident introduces own preferences into the deliberation in a neutral manner" was reformulated as "the resident introduces own preferences where indicated." The behavioral indicator "the resident involves information from other concerned health care professionals, relatives, and friends about the (preferences of the) patient in the deliberations, if contributing to the decision-making process" was reformulated as "the resident includes the information provided by involved third parties (including health care professionals, relatives, and friends) if this is relevant for the deliberation of preferences." We removed the remaining 6 behavioral indicators because the experts did not reach consensus and did not provide any relevant suggestions for revision.

Round 3. In the third round, we presented the 2 behavioral indicators we had reformulated as a result of Round 2 and the near-final list of 4 EPAs and 17 behavioral indicators on which the experts had reached consensus in Round 2. See Figure 1 and Supplemental Digital Appendix 1 at <http://links.lww.com/ACADMED/A997>.

The experts rated the 2 reformulated behavioral indicators. No consensus was reached on the behavioral indicator "the resident introduces own preferences where indicated" because only 56% of the experts scored ≥ 6 on the statement "I do like to include this behavioral indicator in the educational curriculum." The main argument given was that the resident's preference might influence the patient too much in the decision-making process since it is hard to state a preference in a neutral manner. We added the behavioral indicator "the resident includes the information provided by involved third parties (including health care professionals, relatives, and friends) if this is relevant for the deliberation of preferences" to the final list since consensus was reached with a median score of 6, and 81% of the experts had a score ≥ 6 (see Table 2).

Table 1

Demographics of Participants (N = 32) on an Expert Panel for a National Delphi Study to Identify Entrustable Professional Activities and Associated Behavioral Indicators for Shared Decision Making in Postgraduate Medical Education, 2017^a

Characteristic	No. (%) ^b
Age in years, mean (SD)	47 (9.7)
Gender: Female	21 (66)
Expertise in SDM^c	
Lecturer ^d	24 (75)
Researcher	14 (44)
Clinical specialty	11 (34)
Family physician	5 (16)
Orthopedic surgeon	2 (6)
Pediatrician	1 (3)
Medical oncologist	1 (3)
Radiation oncologist	1 (3)
Physiotherapist	1 (3)
Behavioral scientist	8 (25)
Policy officer	5 (16)
Patient representative	3 (9)

Abbreviation: SDM, shared decision making.

^aAll participants were Dutch who were chosen for their expertise and special interest in SDM, doctor-patient communication, and medical education.

^bData are no. (%) unless otherwise indicated.

^cMore than one area of expertise is possible.

^dClinician-teacher, teacher, trainer in SDM, educational developer, educationalist, educational coordinator.

Table 2

Final List of Entrustable Professional Activities (EPAs) and Associated Behavioral Indicators for Shared Decision Making in Postgraduate Medical Education on Which an Expert Panel Reached Consensus for a National Delphi Study, With Scores, 2017^a

EPAs and associated behavioral indicators	I do like to include this EPA/behavioral indicator in the educational curriculum. ^b		This EPA/behavioral indicator is applicable in clinical practice. ^b	
	Median (IQR)	Score ≥ 6	Median (IQR)	Score ≥ 6
The resident discusses the desirability of shared decision making with the patient.	7 (1)	91%	6 (1)	88%
Explains that shared decision making is desirable, as a choice needs to be made	6 (2)	75%	6 (2)	72%
Explains the objective of shared decision making and the way to approach this process	6 (1)	81%	6 (1)	59%
Clarifies the patient's perspective (ideas, concerns, and expectations) and personal goals and values	7 (1)	91%	6 (0)	84%
Coaches the patient during the decision-making process in expressing personal considerations, always taking the patient's intellectual level and health literacy into consideration	6 (1)	84%	6 (1)	63%
The resident discusses the options for management with the patient.	7 (0)	100%	6 (1)	97%
Discusses the relevant options for management (including the wait-and-see option), based on up-to-date knowledge about these options and available evidence-based guidelines and recommendations	7 (1)	100%	6 (1)	81%
Tailors the minimally required information about the options to the patient's need for information, the patient's perspective and personal goals and values	6 (1)	78%	6 (1)	72%
Provides clear, objective, and structured information about the options	7 (1)	97%	6 (1)	88%
Discusses the potential burden of treatment and the chances of favorable or unfavorable outcomes for each option	6 (1)	94%	6 (1)	75%
Uses or refers to available evidence-based patient education and advisory materials (e.g., websites like the Dutch thuisarts.nl, or decision aids) to support the decision-making process	6 (1)	84%	6 (2)	75%
Checks how the information about the options is understood and interpreted, and if necessary provides sufficient time to consider the information	7 (1)	97%	6 (1)	91%
The resident explores the patient's preferences and deliberations.	7 (1)	97%	6 (1)	91%
Clarifies the perceptions and preferences regarding the options	7 (1)	88%	6 (1)	72%
Clarifies the motivation, practicability, and feasibility of the options, taking the patient's personal context into consideration	6 (1)	78%	6 (1)	66%
Includes the information provided by involved third parties (including health care professionals, relatives, and friends) if this is relevant for the deliberation of preferences	6 (0)	81%	6 (1)	69%
Summarizes the main deliberations on the different options and checks whether this is correct for the patient	7 (1)	88%	6 (2)	75%
The resident takes a well-argued decision together with the patient.	7 (1)	94%	6 (1)	84%
Adjusts the timing of the decision making to the patient's pace, while taking the potential medical urgency into consideration	6.5 (1)	88%	6 (1)	84%
Comes to a decision together with the patient, based on the most important deliberations	7 (1)	91%	6 (1)	88%
Checks whether the patient agrees with the decision and discusses the practical consequences and the further implementation of the decision	6.5 (1)	91%	6 (1)	81%
Records the decision and the underlying motivation for the decision in the patient's medical file	7 (1)	81%	6 (1)	78%

Abbreviation: IQR, interquartile range.

^aAll participants on the panel were Dutch who were chosen for their expertise and special interest in SDM, doctor–patient communication, and medical education. Consensus on individual EPAs and behavioral indicators in all 3 rounds was defined as a median score of ≥ 6 and ≥ 75% of the expert panel assigning a score of ≥ 6 to the first statement.

^bThe expert panel indicated their agreement with the 2 statements for each EPA and associated indicators on a 7-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = more or less disagree, 4 = undecided, 5 = more or less agree, 6 = agree, 7 = strongly agree.

After 3 Delphi rounds, consensus was reached on 4 SDM EPAs and 18 behavioral indicators for postgraduate medical education (see Table 2). Of the 32 experts, 30 (94%) agreed on this list of SDM EPAs and behavioral indicators. The 2 experts who did not agree with this list did not give any qualitative feedback. All 4 EPAs on which consensus was reached also received high ratings on the statement “this EPA/behavioral indicator is applicable in clinical practice”; however, this statement was scored ≥ 6 by $\geq 75\%$ of the expert panel on only 11 of the 18 behavioral indicators on which consensus was reached (see Table 2).

Discussion

Summary of main findings

In this Delphi study, a multidisciplinary Dutch panel of 32 experts reached consensus on 4 EPAs and 18 associated behavioral indicators for SDM that residents should be trained in during postgraduate medical education to increase the routine application of SDM. The 94% ($n = 30$) agreement on the near-final list indicates a high degree of consensus.

Reflection on main findings

The developed EPAs, which are in line with well-known SDM models,^{35,36} describe SDM behaviors formulated for the end-stage proficiency level of postgraduate medical training, and aim to deliver clinicians that are able to routinely apply adequate SDM.²³ The underlying behavioral indicators support tailored learning processes by providing room to address the building blocks of the EPAs, depending on individual learning needs during workplace learning. The intention of the developed EPAs is to align theory and practice and bridge competencies by describing units of professional practice.²⁴ In the 2015 CanMEDS physician competency framework, the operationalization of SDM is generic and described in 3 enabling competencies. These focus on adapting SDM to the unique needs and preferences of each patient and to his or her clinical condition and circumstances; facilitation of discussions with patients and their families in a respectful, nonjudgmental, and culturally safe manner; and use of communication skills and strategies to support informed patient decisions regarding their health.¹⁴ Our SDM EPAs

are intended to describe the underlying process of decision making, which may take place over several clinical encounters. They integrate competency domains, such as medical knowledge, communication, collaboration, and EBM. In proceeding in this manner, we intended to develop EPAs that Warm et al categorized in their 2014 study on the mapping of observable practice activities for residents as process oriented. These EPAs must be distinguished from content-oriented EPAs, which are specific for the medical discipline (e.g., evaluating urinary incontinence in the medical discipline of urology).³⁹ In a 2019 scoping review of EPAs, Shorey and colleagues looked at 12 studies that all focused on the development of these specialty-specific EPAs, mostly for medical graduate education.²⁶ The SDM EPAs developed in this study may support their implementation, as SDM requires a context-specific application of competencies mapped to concrete clinical tasks of the medical discipline, taking the medical needs and the values and preferences of the patient into consideration.⁴⁰

Implications

A next step is the implementation of the SDM EPAs in existing competency-based workplace curricula. A review of the literature on the effects of training SDM showed that most interventions with health professionals consisted of single training sessions and that sustainable application of SDM in clinical encounters diminished over time.^{12,41–43} Longitudinal workplace training is necessary to bridge the transfer gap between learning and sustainable application in clinical practice and to support integration of the SDM EPAs into the professional repertoire of future clinicians.²² The identified EPAs can be used as a tool for observing the SDM process in clinical encounters and for providing meaningful feedback based on these observations. For the SDM EPAs to support the development of expertise, individual learning processes should be a starting point to prevent using the EPAs as a box-checking exercise. In line with how EPAs are currently used in medical specialty training, the identified EPAs may also guide the assessment of the resident's level of competence. Additionally, the EPAs can be incorporated into the continuous professional education of clinical supervisors to enhance their SDM competence since adequate role modeling is essential in workplace-based learning.

Because SDM is a key component of EBM and literature shows that residents learn complex skills such as patient-centered communication optimally when these skills are integrated with medical expertise,^{18,19} we suggest integrating SDM EPAs into the postgraduate EBM curricula.^{17,19} Further research needs to address potential barriers to and facilitators for learning SDM and to provide learners with examples of concrete language to practice SDM during their clinical encounters.

Strengths and limitations

To our knowledge, this is the first study on EPAs and behavioral indicators for SDM. We believe the Delphi technique is a suitable approach to gain consensus on EPAs and behavioral indicators; we limited direct influence of other panel members and weighted individual opinions equally by having the experts fill in questionnaires anonymously and individually.^{29–31} By feeding back the results of the previous round to the next, we intended to promote reconsideration of initial opinions in relation to other experts' ratings.

We believe the quality of the developed EPAs was improved by the differences in the participants' backgrounds and by the presence of all backgrounds we considered relevant. The quality of these EPAs may make it easier to implement them in postgraduate medical education. All 32 expert panel members who completed the first round completed the entire Delphi process, which reflects experts' interest in the theme, the importance of the study, and the quick succession of the rounds. For the first Delphi round, we used EPAs and behavioral indicators that we had developed based on our comprehensive preliminary work. Although in a traditional Delphi study, experts could have generated EPAs and behavioral indicators themselves, we believe that this approach would have been too time consuming for the experts. Our choice may have influenced the composition of the list of EPAs and behavioral indicators although we intended to minimize such influence by encouraging the experts to give qualitative feedback. Based on our analysis of the experts' input, we determined no substantial changes to the content of the EPAs and behavioral indicators were needed; this result seems to confirm the appropriateness of the

EPAs and behavioral indicators that we developed for the study.

We limited our implementation of this Delphi study to the national level, in the Netherlands, because SDM is very sensitive to language and culture. Nonetheless, the EPAs include generic elements that other countries can adapt to their national needs. We decided not to invite residents to participate in this Delphi study despite the intended implementation in postgraduate medical training because we believe that the concepts of EPAs and SDM are too complex for residents. However, including residents might have given us more insight into the transfer gap they face when being trained in SDM.

Conclusions

We succeeded in developing EPAs and associated behavioral indicators for SDM for postgraduate medical education to improve the quality of SDM training and the application of SDM in clinical practice.

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Previous presentations: Preliminary results of this study were presented at the 9th International Shared Decision Making (ISDM) Conference; July 2–5, 2017; Lyon, France. The results of this study were presented at the International Conference on Communication in Healthcare (ICCH); September 1–5, 2018; Porto, Portugal.

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References

- 1 Stiggelbout AM, Van der Weijden T, De Wit MP, et al. Shared decision making: Really putting patients at the centre of healthcare. *BMJ*. 2012;344:e256.
- 2 Barry MJ, Edman-Levitan S. Shared decision making—Pinnacle of patient-centered care. *N Engl J Med*. 2012;366:780–781.
- 3 Spatz ES, Krumholz HM, Moulton BW. Prime time for shared decision making. *JAMA*. 2017;317:1309–1310.
- 4 Hoffmann TC, Montori VM, Del Mar C. The connection between evidence-based medicine and shared decision making. *JAMA*. 2014;312:1295–1296.
- 5 Elwyn G, Edwards A, Kinnersley P. Shared decision-making in primary care: The neglected second half of the consultation. *Br J Gen Pract*. 1999;49:477–482.
- 6 Guadagnoli E, Ward P. Patient participation in decision-making. *Soc Sci Med*. 1998;47:329–339.
- 7 Coulter A, Collins A. Making Shared Decision Making a Reality: No Decision About Me, Without Me. London, UK: The King's Fund; 2011.
- 8 Chewning B, Bylund CL, Shah B, Arora NK, Gueguen JA, Makoul G. Patient preferences for shared decisions: A systematic review. *Patient Educ Couns*. 2012;86:9–18.
- 9 Pollard S, Bansback N, Bryan S. Physician attitudes toward shared decision making: A systematic review. *Patient Educ Couns*. 2015;98:1046–1057.
- 10 Couët N, Desroches S, Robitaille H, et al. Assessments of the extent to which health-care providers involve patients in decision making: A systematic review of studies using the OPTION instrument. *Health Expect*. 2015;18:542–561.
- 11 de Mik SML, Stubenrouch FE, Balm R, Ubink DT. Systematic review of shared decision-making in surgery. *Br J Surg*. 2018;105:1721–1730.
- 12 Diouf NT, Menear M, Robitaille H, Painchaud Guérard G, Légaré F. Training health professionals in shared decision making: Update of an international environmental scan. *Patient Educ Couns*. 2016;99:1753–1758.
- 13 Légaré F, Adekpedjou R, Stacey D, et al. Interventions for increasing the use of shared decision making by healthcare professionals. *Cochrane Database Syst Rev*. 2018;7:CD006732.
- 14 Frank JR, Snell LS, Sherbino J, et al. CanMEDS 2015 Physician Competency Framework. Ottawa, ON, Canada: Royal College of Physicians and Surgeons of Canada; 2015.
- 15 Accreditation Council for Graduate Medical Education. <https://www.acgme.org>. Accessed June 11, 2019.
- 16 Godolphin W. Shared decision-making. *Healthc Q*. 2009;12 Spec No Patient: e186–e190.
- 17 van den Eertwegh V, van Dulmen S, van Dalen J, Scherpbier AJ, van der Vleuten CP. Learning in context: Identifying gaps in research on the transfer of medical communication skills to the clinical workplace. *Patient Educ Couns*. 2013;90:184–192.
- 18 van den Eertwegh V, van der Vleuten C, Stalmeijer R, van Dalen J, Scherpbier A, van Dulmen S. Exploring residents' communication learning process in the workplace: A five-phase model. *PLoS One*. 2015;10:e0125958.
- 19 Giroldi E, Veldhuijzen W, Geelen K, et al. Developing skilled doctor-patient communication in the workplace: A qualitative study of the experiences of trainees and clinical supervisors. *Adv Health Sci Educ Theory Pract*. 2017;22:1263–1278.
- 20 Towle A, Godolphin W. Framework for teaching and learning informed shared decision making. *BMJ*. 1999;319:766–771.
- 21 Legare F, Moumjid-Ferdjaoui N, Drolet R, et al. Core competencies for shared decision making training programs: Insights from an international, interdisciplinary working group. *J Contin Educ Health Prof*. 2013;33:267–273.
- 22 Iobst WF, Sherbino J, Cate OT, et al. Competency-based medical education in postgraduate medical education. *Med Teach*. 2010;32:651–656.
- 23 ten Cate O, Scheele F. Competency-based postgraduate training: Can we bridge the gap between theory and clinical practice? *Acad Med*. 2007;82:542–547.
- 24 ten Cate O. Nuts and bolts of entrustable professional activities. *J Grad Med Educ*. 2013;5:157–158.
- 25 Van Merriënboer J, Van der Klink M, Hendriks M. Competencies: From Complications Toward Agreement [in Dutch]. The Hague, the Netherlands: Dutch Educational Council; 2002.
- 26 Shorey S, Lau TC, Lau ST, Ang E. Entrustable professional activities in health care education: A scoping review. *Med Educ*. 2019;53:766–777.
- 27 Koninklijke Nederlandse Maatschappij tot bevordering der Geneeskunst. The Royal Dutch Medical Association. *Medische vervolgoedingen: Vervolgoedingen*. Postgraduate specialty training. Utrecht, the Netherlands: KNMG; 2018. <https://www.knmg.nl/opleiding-herregistratie-carriere/medische-vervolgoedingen/vervolgoedingen.htm>. Accessed March 20, 2018.
- 28 Humphrey-Murto S, Varpio L, Wood TJ, et al. The use of the Delphi and other consensus group methods in medical education research: A review. *Acad Med*. 2017;92:1491–1498.
- 29 Wisman-Zwarter N, van der Schaaf M, ten Cate O, Jonker G, van Klei WA, Hoff RG. Transforming the learning outcomes of anaesthesiology training into entrustable professional activities: A Delphi study. *Eur J Anaesthesiol*. 2016;33:559–567.

- 30 Shaughnessy AF, Sparks J, Cohen-Osher M, Goodell KH, Sawin GL, Gravel J Jr. Entrustable professional activities in family medicine. *J Grad Med Educ.* 2013;5:112–118.
- 31 Hauer KE, Kohlwes J, Cornett P, et al. Identifying entrustable professional activities in internal medicine training. *J Grad Med Educ.* 2013;5:54–59.
- 32 Waggoner J, Carline JD, Durning SJ. Is there a consensus on consensus methodology? Descriptions and recommendations for future consensus research. *Acad Med.* 2016;91:663–668.
- 33 Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. *J Adv Nurs.* 2000;32:1008–1015.
- 34 Humphrey-Murto S, Varpio L, Gonsalves C, Wood TJ. Using consensus group methods such as Delphi and nominal group in medical education research. *Med Teach.* 2017;39:14–19.
- 35 Stiggelbout AM, Pieterse AH, De Haes JC. Shared decision making: Concepts, evidence, and practice. *Patient Educ Couns.* 2015;98:1172–1179.
- 36 Elwyn G, Frosch D, Thomson R, et al. Shared decision making: A model for clinical practice. *J Gen Intern Med.* 2012;27:1361–1367.
- 37 Elwyn G, Durand MA, Song J, et al. A three-talk model for shared decision making: Multistage consultation process. *BMJ.* 2017;359:j4891.
- 38 Burns KE, Duffett M, Kho ME, et al; ACCADEMY Group. A guide for the design and conduct of self-administered surveys of clinicians. *CMAJ.* 2008;179:245–252.
- 39 Warm EJ, Mathis BR, Held JD, et al. Entrustment and mapping of observable practice activities for resident assessment. *J Gen Intern Med.* 2014;29:1177–1182.
- 40 Rivière E, Jaffrelot M, Jouquan J, Chiniara G. Debriefing for the transfer of learning: The importance of context. *Acad Med.* 2019;94:796–803.
- 41 Légaré F, Politi MC, Drolet R, Desroches S, Stacey D, Bekker H; SDM-CPD Team. Training health professionals in shared decision-making: An international environmental scan. *Patient Educ Couns.* 2012;88:159–169.
- 42 Stacey D, Samant R, Pratt M, Légaré F. Feasibility of training oncology residents in shared decision making: A pilot study. *J Cancer Educ.* 2012;27:456–462.
- 43 Geiger F, Liethmann K, Reitz D, Galalae R, Kasper J. Efficacy of the doktormitSDM training module in supporting shared decision making—Results from a multicenter double-blind randomized controlled trial. *Patient Educ Couns.* 2017;100:2331–2338.